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L4: Entry 1 of 1 File: PGPB Oct 3, 2002

DOCUMENT-IDENTIFIER: US 20020142108 A1
TITLE: Liquid crystal compounds, liquid crystal medium and liquid crystal display

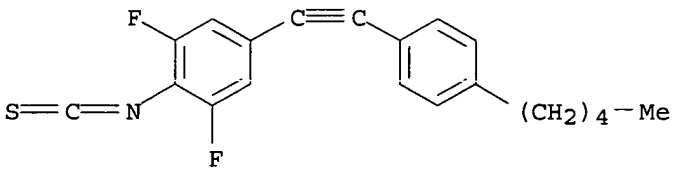
Detail Description Table CWU (21):
25 Compound/Abbreviation Concentration/mass-% PTG-5-S 10.0 PTU-3-S 15.0 PTU-4O-S 10.0 PVG-5-S 10.0 PGU-3-S 10.0 PPU-3-S 5.0 PPU-4-S 5.0 PPU-5-S 5.0 PGIP-3-N 15.0 PPYP-4N 15.0 .SIGMA. 100.0

Detail Description Table CWU (23):
27 Compound/Abbreviation Concentration/mass-% PTG-5-S 10.0 PTU-3-S 13.0 PTU-4O-S 10.0 PVG-5-S 11.0 PGU-3-S 10.0 PPU-3-S 5.0 PPU-4-S 5.0 PPU-5-S 5.0 PGIP-3-N 12.0 PPYP-4N 13.0 PVG-V-S 6.0 .SIGMA. 100.0

RN 313472-50-3 REGISTRY
CN Benzene, 1,3-difluoro-2-isothiocyanato-5-[(4-pentylphenyl)ethynyl]- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H17 F2 N S
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6	C6	6	C6	46.150.18	2



Calculated Properties (CALC)

PROPERTY (CODE)	VALUE	CONDITION	NOTE
Bioconc. Factor (BCF)	1396095	pH 1	(1) ACD
Bioconc. Factor (BCF)	1396095	pH 4	(1) ACD
Bioconc. Factor (BCF)	1396095	pH 7	(1) ACD
Bioconc. Factor (BCF)	1396095	pH 8	(1) ACD
Bioconc. Factor (BCF)	1396095	pH 10	(1) ACD
Boiling Point (BP)	450.7+/-35.0 deg C	760.0 Torr	(1) ACD
Enthalpy of Vap. (HVAP)	68.24+/-3.0 kJ/mol		(1) ACD
Flash Point (FP)	226.4+/-46.7 deg C		(1) ACD
H acceptors (HAC)	1		(1) ACD
H donors (HD)	0		(1) ACD
Koc (KOC)	871159	pH 1	(1) ACD
Koc (KOC)	871159	pH 4	(1) ACD
Koc (KOC)	871159	pH 7	(1) ACD
Koc (KOC)	871159	pH 8	(1) ACD
Koc (KOC)	871159	pH 10	(1) ACD
logD (LOGD)	8.39	pH 1	(1) ACD
logD (LOGD)	8.39	pH 4	(1) ACD
logD (LOGD)	8.39	pH 7	(1) ACD
logD (LOGD)	8.39	pH 8	(1) ACD
logD (LOGD)	8.39	pH 10	(1) ACD
logP (LOGP)	8.388+/-0.512		(1) ACD
Molar Solubility (SLB.MOL)	<0.01 mol/L	pH 1	(1) ACD
Molar Solubility (SLB.MOL)	<0.01 mol/L	pH 4	(1) ACD
Molar Solubility (SLB.MOL)	<0.01 mol/L	pH 7	(1) ACD
Molar Solubility (SLB.MOL)	<0.01 mol/L	pH 8	(1) ACD
Molar Solubility (SLB.MOL)	<0.01 mol/L	pH 10	(1) ACD
Molecular Weight (MW)	341.42		(1) ACD
Vapor Pressure (VP)	6.87E-08 Torr	25.0 deg C	(1) ACD

(1) Calculated using Advanced Chemistry Development (ACD) Software Solaris

V4.67 ((C) 1994-2003 ACD)

4 REFERENCES IN FILE CA (1957 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1

AN 136:110201 CA
TI Liquid crystal compound, nematic liquid crystal mixture, and polymer dispersion liquid crystal display
IN Poetsch, Eike; Meyer, Volker; Krause, Joachim; Manabe, Atsutaka
PA Merck Patent G.M.B.H., Germany
SO Jpn. Kokai Tokkyo Koho, 40 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K019-42
ICS C09K019-12; C09K019-16; C09K019-30; G02F001-13; G02F001-1334
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002012871	A2	20020115	JP 2001-137750	20010508
PRAI	EP 2000-109163		20000508		

AB The invention relates to a nematic liq. crystal mixt. contg. a pos. anisotropic compd.(s) showing .DELTA.n of .gtoreq.0.30 (at 20.degree., 589.3 nm) represented by R1-A11-Z11-[A12-Z12]n-A13-NCS (R1 = C1-12-alky, Cl, OCF3, CN, NCS, F; Z11, Z12 = trans-CH:CH-, -CH:CF-, -CF:CH-, -CF:CF-, single bond; A11 = trans-1,4-cyclohexylene, 1,4-phenylene, 1,4-phenylene with F-substituent(s); A12, A13 = 1,4-phenylene, 1,4-phenylene with F-substituent(s); n = 0, 1) and a pos. anisotropic compd.(s) represented by R2-[A21]n-A22-A23-X2 (R2 = C1-12-alky, Cl, OCF3, CN, NCS, F; Z11, Z12 = trans-CH:CH-, -CH:CF-, -CF:CH-, -CF:CF-, single bond; A21 = trans-1,4-cyclohexylene, 1,4-phenylene, 1,4-phenylene with F-substituent(s); A22, A23 = 1,4-phenylene, 1,4-phenylene with F-substituent(s); X2 = CN, F, Cl; n = 0, 1). The liq. crystal mixt., showing wide-nematic-phase temp. ranges and low viscosity, is esp. suitable for (holog.) polymer dispersed liq. crystal displays.

ST nematic liq crystal mixt polymer dispersion display

IT Liquid crystal displays
(nematic liq. crystal mixt. esp. suitable for holog. polymer dispersion liq. crystal display)

IT Liquid crystals
(nematic; nematic liq. crystal mixt. esp. suitable for holog. polymer dispersion liq. crystal display)

IT 38190-45-3 40817-08-1 52709-86-1 54211-46-0 63617-61-8
99217-32-0 99602-91-2 104569-87-1 104569-88-2 116831-09-5
132123-39-8 137019-94-4 137019-95-5 219939-28-3 219939-29-4
281680-31-7 313472-50-3 316364-68-8 356797-91-6 356797-92-7
356797-93-8 356797-97-2 356797-99-4 356798-03-3 356798-05-5
356798-06-6 356798-12-4 356798-23-7 356798-25-9 356798-26-0
356798-27-1 356798-31-7 356798-32-8 385435-70-1 388625-24-9
388625-25-0 388625-26-1 388625-28-3 388625-29-4 388625-31-8
388625-33-0 388625-42-1 388625-45-4
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nematic liq. crystal mixt. esp. suitable for holog. polymer dispersion liq. crystal display)

IT 288-32-4, Imidazole, reactions 463-71-8, Thiophosgene 6160-65-2
67567-26-4, 4-Bromo-2,6-difluoroaniline 143651-26-7, Boronic acid, [4-(4-pentylcyclohexyl)phenyl]-, trans- 388623-07-2 388623-85-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of nematic liq. crystal mixt. esp. suitable for holog. polymer dispersion liq. crystal display)

IT 138074-14-3P 385435-64-3P 385435-68-7P 385435-69-8P 385435-73-4P
388623-08-3P 388623-10-7P 388623-12-9P 388623-13-0P 388623-14-1P
388623-15-2P 388623-17-4P 388623-18-5P 388623-19-6P 388623-20-9P
388623-21-0P 388623-22-1P 388623-30-1P 388623-32-3P 388623-33-4P
388623-34-5P 388623-35-6P 388623-36-7P 388623-37-8P 388623-38-9P
388623-39-0P 388623-40-3P 388623-42-5P 388623-43-6P 388623-44-7P
388623-45-8P 388623-46-9P 388623-47-0P 388623-49-2P 388623-50-5P
388623-51-6P 388623-52-7P 388623-54-9P 388623-55-0P 388623-56-1P
388623-57-2P 388623-58-3P 388623-59-4P 388623-60-7P 388623-62-9P
388623-63-0P 388623-64-1P 388623-65-2P 388623-66-3P 388623-67-4P
388623-68-5P 388623-69-6P 388623-70-9P 388623-71-0P 388623-72-1P
388623-73-2P 388623-74-3P 388623-75-4P 388623-76-5P 388623-77-6P
388623-78-7P 388623-79-8P 388623-80-1P 388623-82-3P 388623-83-4P
388623-84-5P 388623-86-7P 388623-88-9P 388623-90-3P 388623-91-4P
388623-93-6P 388623-94-7P 388623-95-8P 388623-96-9P 388623-97-0P
388623-98-1P 388623-99-2P 388624-00-8P 388624-01-9P 388624-02-0P
388624-03-1P 388624-04-2P 388624-05-3P 388624-07-5P 388624-08-6P
388624-09-7P 388624-10-0P 388624-12-2P 388624-13-3P 388624-14-4P
388624-15-5P 388624-16-6P 388624-17-7P 388624-18-8P 388624-19-9P
388624-21-3P 388624-22-4P 388624-23-5P 388624-24-6P 388624-25-7P
388624-26-8P 388624-27-9P 388624-28-0P 388624-29-1P 388624-31-5P
388624-32-6P 388624-34-8P 388624-35-9P 388624-37-1P 388624-39-3P
388624-40-6P 388624-42-8P 388624-43-9P 388624-44-0P 388624-46-2P
388624-47-3P 388624-48-4P 388624-49-5P 388624-50-8P 388624-51-9P
388624-52-0P 388624-53-1P 388624-54-2P 388624-55-3P 388624-56-4P
388624-58-6P 388624-59-7P 388624-60-0P 388624-61-1P 388624-62-2P
388624-63-3P 388624-64-4P 388624-65-5P 388624-66-6P 388624-67-7P
388624-68-8P 388624-69-9P 388624-71-3P 388624-72-4P 388624-73-5P
388624-74-6P 388624-75-7P 388624-76-8P 388624-77-9P 388624-78-0P
388624-80-4P 388624-81-5P 388624-83-7P 388624-84-8P 388624-85-9P
388624-86-0P 388624-92-8P 388624-93-9P 388624-94-0P 388624-95-1P
388624-96-2P 388624-97-3P 388624-98-4P 388624-99-5P 388625-00-1P
388625-01-2P 388625-02-3P 388625-03-4P 388625-04-5P 388625-05-6P
388625-06-7P 388625-07-8P 388625-08-9P 388625-09-0P 388625-10-3P
388625-11-4P 388625-12-5P 388625-13-6P 388625-14-7P 388625-15-8P
388625-16-9P 388625-17-0P 388625-18-1P 388625-19-2P 388625-20-5P
388625-21-6P 388625-22-7P 388625-23-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of nematic liq. crystal mixt. esp. suitable for holog. polymer dispersion liq. crystal display)

REFERENCE 2

AN 136:77327 CA
TI Liquid-crystal medium, liquid-crystal display using it, and utilization of it
IN Manabe, Atsutaka; Poetsch, Eike; Reiffenrath, Volker
PA Merck Patent G.M.B.H., Germany
SO Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K019-02
ICS C09K019-12; C09K019-16; C09K019-18; C09K019-30; C09K019-34; C09K019-42; G02F001-13; G02F001-1334
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 2002003844 A2 20020109 JP 2001-137708 20010508
PRAI EP 2000-109162 20000508
AB The medium contains (1) a strongly pos. dielec. liq.-crystal component A comprising .gtoreq.1 compds. having NCS groups at a terminal and having .DELTA.n >0.30 at 20.degree. and 589.3 nm and (2) a pos. dielec. liq.-crystal component B contg. compds. with broad nematic phase range. Also claimed are liq.-crystal displays and systems including the medium. The medium is esp. suitable for polymer dispersed liq.-crystal systems (PDLC) and holog. PDLC.
ST liq crystal display pos dielec component broad nematic phase
IT Liquid crystal displays
(liq.-crystal medium with strongly pos. dielec. and broad nematic phase range for display)
IT 40817-08-1D, mixt. contg. 52709-86-1D, mixt. contg. 58743-75-2D, mixt. contg. 58743-76-3D, mixt. contg. 99217-32-0D, mixt. contg. 116831-09-5D, mixt. contg. 138074-14-3D, mixt. contg. 313472-50-3D, mixt. contg. 316364-68-8D, mixt. contg. 356797-91-6D, mixt. contg. 356797-92-7D, mixt. contg. 356797-93-8D, mixt. contg. 356797-99-4D, mixt. contg. 356798-03-3D, mixt. contg. 356798-05-5D, mixt. contg. 356798-06-6D, mixt. contg. 356798-23-7D, mixt. contg. 356798-27-1D, mixt. contg. 385435-48-3 385435-64-3D, mixt. contg. 385435-68-7D, mixt. contg. 385435-69-8D, mixt. contg. 385435-70-1D, mixt. contg. 385435-71-2 385435-72-3 385435-73-4D, mixt. contg.
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(liq.-crystal medium with strongly pos. dielec. and broad nematic phase range for display)

REFERENCE 3

AN 135:203078 CA
TI Liquid crystal medium comprising strongly dielectric positive isothiocyanate compound for polymer dispersed liquid crystal display
IN Poetsch, Eike; Manabe, Atsutaka; Reiffenrath, Volker; Reuter, Markus; Krause, Joachim; Pauluth, Detlef
PA Merck Patent Gmbh, Germany
SO Eur. Pat. Appl., 54 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C09K019-02
ICS C09K019-16; C09K019-12; C09K019-42; C09K019-44; C09K019-54; C07C331-28
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1126006	A2	20010822	EP 2001-101157	20010123
	EP 1126006	A3	20030226		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2002142108	A1	20021003	US 2001-773673	20010202
	JP 2001254080	A2	20010918	JP 2001-37730	20010214
PRAI	EP 2000-102952		20000214		
	EP 2000-109164		20000508		
	EP 2000-126408		20001205		
	EP 2000-EP00109164		20000508		
	EP 2000-EP00126408		20001205		

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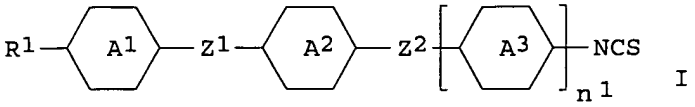


I

AB The invention relates to liq. crystal media comprising a strongly dielec. pos. isothiocyanate compds. of formula I (R1=alkyl, C1-10-alkoxy, alkenyl, C1-7-alkenyloxy or-alkoxyalkyl, CN, NCS, halogen; Z1, Z2 = single bond, trans-CH=CH, Z2 = single bond if n1 = 0; n1 = 0,1; A1, A2, A3 = phenyls, at least one of phenyls is substituted by one or two fluorine atoms) , and another dielec. pos. compd., preferably comprising terminally polar substituted bi- or terphenyl compds., as further defined in the claims, as well as to liq. crystal displays comprising these media, in particular to polymer dispersed liq. crystal display (PDLC) and most particular to holog. PDLC displays.

ST liq crystal isothiocyanate compd medium prepn polymer dispersed display

IT Liquid crystal displays
Liquid crystals
(liq. crystal medium comprising strongly dielec. pos. isothiocyanate compds for polymer dispersed liq. crystal display)

IT 92-52-4, Biphenyl, reactions 367-24-8, 4-Bromo-2-fluoroaniline 461-96-1, 1-Bromo-3,5-difluoro-benzene 588-96-5, p-Ethoxyphenylbromide 5459-40-5, 4-Ethoxy-styrene 6160-65-2 6163-58-2, Tri-o-tolylphosphine 10101-89-0, Trisodiumphosphate dodecahydrate 13965-03-2 23055-77-8, 4-Bromo-4'-chloro-biphenyl 31989-57-8, Bis(triphenylphosphine) palladium 67567-26-4, 4-Bromo-2,6-difluoroaniline 105931-73-5, 1-Bromo-3-fluoro-4-iodo-benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of isothiocyanate liq. crystal compds)

IT 71274-84-5P, 4-Trifluoromethoxy-biphenyl
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in prepn. of isothiocyanate liq. crystal compds)

IT 160347-36-4P 356797-91-6P 356797-92-7P 356797-93-8P 356797-94-9P 356797-95-0P 356797-96-1P 356797-97-2P 356797-98-3P 356797-99-4P 356798-00-0P 356798-01-1P 356798-02-2P 356798-03-3P 356798-04-4P 356798-05-5P 356798-06-6P 356798-07-7P 356798-08-8P 356798-09-9P 356798-10-2P 356798-11-3P 356798-12-4P 356798-13-5P 356798-14-6P 356798-15-7P 356798-16-8P 356798-17-9P 356798-18-0P 356798-19-1P 356798-20-4P 356798-21-5P 356798-22-6P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(liq. crystal medium comprising strongly dielec. pos. isothiocyanate compds for polymer dispersed liq. crystal display)

IT 63617-61-8 116831-09-5 127523-43-7 219939-28-3 219939-29-4 313472-50-3 356798-23-7 356798-24-8 356798-25-9 356798-26-0 356798-27-1 356798-28-2 356798-29-3 356798-30-6 356798-31-7 356798-32-8
RL: TEM (Technical or engineered material use); USES (Uses)
(liq. crystal medium comprising strongly dielec. pos. isothiocyanate compds for polymer dispersed liq. crystal display)

REFERENCE 4

AN 134:63754 CA
TI Materials for liquid crystal displays with reduced power consumption
AU Kirsch, Peer; Bremer, Matthias; Kirsch, Annette; Manabe, Atsutaka; Poetsch, Eike; Reiffenrath, Volker; Tarumi, Kazuaki
CS Liquid Crystals Division, Merck KGaA, Darmstadt, 64271, Germany
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2000), 346, 193-199
CODEN: MCLCE9; ISSN: 1058-725X

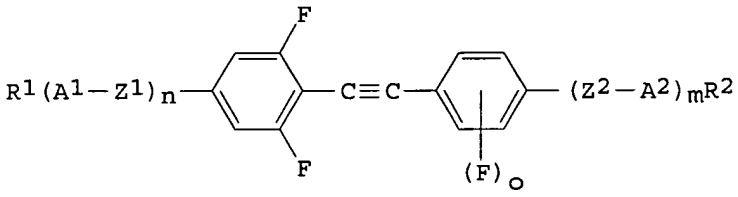
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
AB A significant redn. of the power consumption of a liq. crystal display can be achieved either by application of a lower driving voltage or - even more effectively - by use of a holog. structured reflective scattering type of display without color filters. The first option requires strongly polar materials with extremely high reliability, the second one new types of liq. crystals with a birefringence as high as possible in order to optimize the scattering effect. A mol. modeling based method for the prediction of reliability parameters is presented.
ST liq crystal display active matrix high birefringence reliability material; mol model stable materials liq crystal display active matrix
IT Liquid crystal displays
(active matrix; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption)
IT Ion-molecule reaction
(enthalpy, calcd. semiempirical; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to)
IT Liquid crystals
(fluorinated; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to)
IT Reaction enthalpy
(ion-mol. reaction, calcd. semiempirical; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to)
IT Impurities
(ionic; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to)
IT Birefringence
Dielectric anisotropy
(materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption)
IT Molecular modeling
(materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption supported by)
IT Molecular structure-property relationship
(stability; materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to materials stability)
IT 126391-77-3 133261-31-1 221526-80-3 255728-73-5 255728-82-6
308117-08-0 313472-49-0 313472-50-3
RL: PRP (Properties)
(materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption)
IT 17341-25-2, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(materials with high birefringence or improved voltage holding ratio for active matrix liq. crystal displays with reduced power consumption in relation to ionic impurities)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
(1) Bremer, M; Adv Mater 1993, V5, P842 CAPLUS
(2) Bremer, M; Jpn J Appl Phys 1998, V37, PL88 CAPLUS
(3) Kirsch, P; Angew Chem 1999, V111, P2174
(4) Kirsch, P; Angew Chem Int Ed Engl 1999, V38, P1989 CAPLUS
(5) Klasen, M; Jpn J Appl Phys 1998, V37, PL945 CAPLUS

(6) Sasaki, A; Japan Display '86 1986, P62

AN 1993:59406 CAPLUS
DN 118:59406
TI 2,6 difluorotolane
IN Reiffenrath, Volker; Plach, Herbert
PA Merck Patent G.m.b.H., Germany
SO Ger. Offen., 19 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C07C043-225
ICS C07C025-24; C09K019-06; G09F009-35; G02F001-13; C07D319-06; C07D213-24; C07D239-24
ICA C09K019-18; C09K019-30; C09K019-34; C09K019-20; C09K019-58; C07D521-00; C07D401-10; C07D401-12; C07D405-10; C07D405-12
CC 25-3 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 4105742	A1	19920827	DE 1991-4105742	19910223
DE 4105742	C2	20010809		
PRAI DE 1991-4105742		19910223		

OS CASREACT 118:59406; MARPAT 118:59406
GI



I

AB A process was developed for the prepn. of 2,6-difluorotolane of formula I [R1, R2 = alkyl or alkenyl, A1, A2 = 1,4-cyclohexylene, -phenylene, 2- or 3-fluoro-1,4-phenylene, Z1, Z2 = CH2CH2, -CH2O-, (CH2)4, m, n, o = 1-2] as a component of liq. crystal medium having electrooptical properties. E.g., the treatment of 3,5-difluoropentylbenzene (0.129 mol) with 114 mL THF and BuLi followed by 4-ethoxyacetophenone (0.129 mol) gave a product mixt. which was treated with p-toluenesulfonic acid (4 g) in toluene. Subsequent reaction of product mixt. with .09 mL bromine in EtOAc and with 12.6 mL Et3N and then reaction with LDA in THF gave final product 4-pentyl-2,6-difluoro-4'-ethoxytolane.

ST fluorotolane electrooptical property; acetylene difluoro diphenyl; palladium catalyst coupling fluorophenylacetylene iodobenzene

IT Coupling reaction
(of difluorophenylacetylene with trifluoromethoxyiodobenzene and analogs, difluorotolanes from)

IT Coupling reaction catalysts
(palladium compds., for the coupling of difluorophenylacetylene with trifluoromethoxyiodobenzene and analogs, difluorotolanes from)

IT 144890-97-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(3)

IT 14221-01-3
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for the coupling of difluoroiodobenzene derivs. with fluorophenylacetylene)

IT 13965-03-2
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for the coupling of difluorophenylacetylene deriv. with trifluoromethoxyiodobenzene)

IT 628-17-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with difluorobromobenzene)
IT 461-96-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with iodopentane)
IT 103962-05-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with difluorophenylacetylene deriv.)
IT 766-98-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with ethoxydifluoroiodobenzene)
IT 144911-50-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with trifluoromethoxyiodobenzene)
IT 144891-25-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(iodination of)
IT 144891-24-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and coupling of, with fluorophenylacetylene)
IT 40817-08-1P 41122-70-7P 52709-83-8P 58743-75-2P 58743-76-3P
61203-99-4P 61204-01-1P 79832-84-1P 80944-44-1P 80955-71-1P
81936-32-5P 85600-56-2P 134143-76-3P 144890-96-0P 144890-98-2P
144890-99-3P 144891-00-9P 144891-01-0P 144891-02-1P 144891-03-2P
144891-04-3P 144891-05-4P 144891-06-5P 144891-07-6P 144891-08-7P
144891-09-8P 144891-10-1P 144891-11-2P 144891-12-3P 144891-13-4P
144891-14-5P 144891-15-6P 144891-16-7P 144891-17-8P 144891-18-9P
144891-19-0P 144891-20-3P 144891-21-4P 144891-22-5P 144891-23-6P
144891-26-9P 144891-27-0P 144891-28-1P 144891-29-2P 144891-30-5P
144891-31-6P 144891-32-7P **144891-33-8P 144891-34-9P**
144891-35-0P 144891-36-1P 144891-37-2P
144891-38-3P 144891-39-4P 144891-40-7P 144891-41-8P
144891-42-9P 144891-43-0P 144891-44-1P 144891-45-2P 144891-46-3P
144891-47-4P 144891-48-5P 144891-49-6P 144891-50-9P 144891-51-0P
144891-52-1P 144891-53-2P 144891-54-3P 144891-55-4P 144891-56-5P
144891-57-6P 144891-58-7P 144891-59-8P 144891-60-1P 144891-61-2P
144891-62-3P 144891-63-4P 144891-64-5P 144891-65-6P 144891-66-7P
144891-67-8P 144891-68-9P 144891-69-0P 144891-70-3P 144891-71-4P
144891-72-5P 144891-73-6P 144891-74-7P 144891-75-8P 144891-76-9P
144891-77-0P 144891-78-1P 144891-79-2P 144891-80-5P 144891-81-6P
144891-82-7P 144891-83-8P 144891-84-9P 144891-85-0P 144891-86-1P
144891-87-2P 144891-88-3P 144891-89-4P 144891-90-7P 144891-91-8P
144891-92-9P 144891-93-0P 144891-94-1P 144891-95-2P 144891-96-3P
144891-97-4P 144891-98-5P 144891-99-6P 144892-00-2P 144892-01-3P
144892-02-4P 144892-03-5P 144892-04-6P 144892-05-7P 144892-06-8P
144892-07-9P 144892-08-0P 144892-09-1P 144892-10-4P 144892-11-5P
144892-12-6P 144892-13-7P 144892-14-8P 144892-15-9P 144892-16-0P
144892-17-1P 144892-18-2P 144892-19-3P 144892-20-6P 144892-21-7P
144892-22-8P 144892-23-9P 144892-24-0P 144892-25-1P 144892-26-2P
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144911-18-2P 144911-19-3P 144911-20-6P 144911-21-7P 144911-22-8P
144911-23-9P 144911-24-0P 144911-25-1P 144911-26-2P 144911-27-3P
144911-28-4P 144911-29-5P 144911-30-8P 144911-31-9P 144911-32-0P

144911-33-1P 144911-34-2P 144911-35-3P 144911-36-4P 144911-37-5P
144911-38-6P 144911-39-7P 144911-40-0P 144911-41-1P 144911-42-2P
144911-43-3P 144911-44-4P 144911-45-5P 144911-46-6P 144911-47-7P
144911-48-8P 144911-49-9P 144911-51-3P 144911-52-4P 144911-53-5P
144911-54-6P 144911-55-7P 144911-56-8P **144911-57-9P**
144911-58-0P 144911-59-1P 144911-60-4P
144911-61-5P 144911-62-6P 144911-63-7P
144911-64-8P 144911-65-9P 144911-66-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

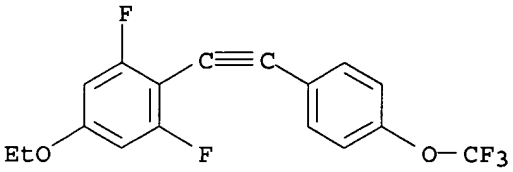
IT 144911-67-1P 144911-68-2P 144911-69-3P 144911-70-6P 144911-71-7P
144911-72-8P 144911-73-9P 144911-74-0P 144922-37-2P 144922-38-3P
144922-39-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT 1676-63-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with difluoro(pentyl)benzene)

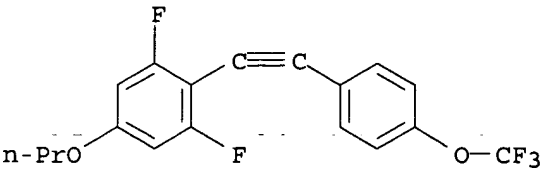
IT 121219-25-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ethoxyacetophenone)

IT **144891-33-8P 144891-34-9P 144891-35-0P**
144891-36-1P 144891-37-2P 144891-38-3P
144891-39-4P 144911-57-9P 144911-58-0P
144911-59-1P 144911-60-4P 144911-61-5P
144911-62-6P 144911-63-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

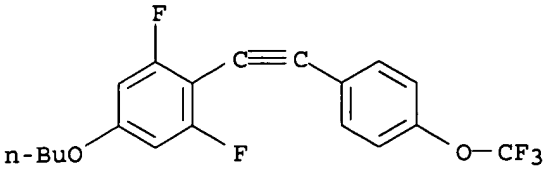
RN 144891-33-8 CAPLUS
CN Benzene, 5-ethoxy-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



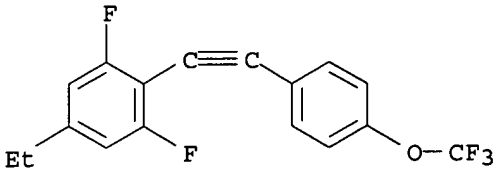
RN 144891-34-9 CAPLUS
CN Benzene, 1,3-difluoro-5-propoxy-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



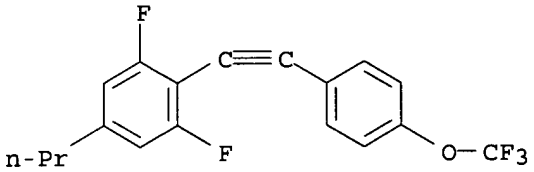
RN 144891-35-0 CAPLUS
CN Benzene, 5-butoxy-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



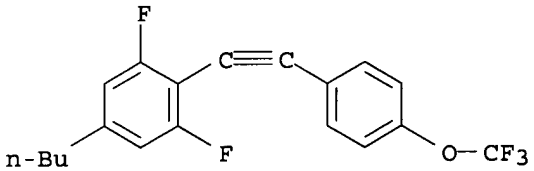
RN 144891-36-1 CAPLUS
CN Benzene, 5-ethyl-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



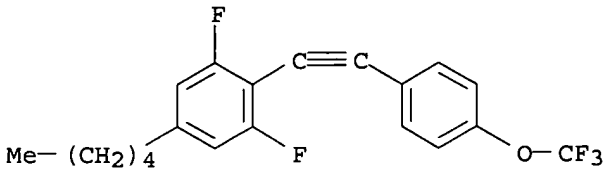
RN 144891-37-2 CAPLUS
CN Benzene, 1,3-difluoro-5-propyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



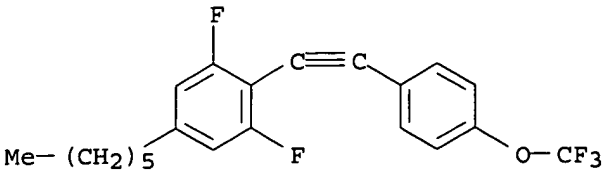
RN 144891-38-3 CAPLUS
CN Benzene, 5-butyl-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



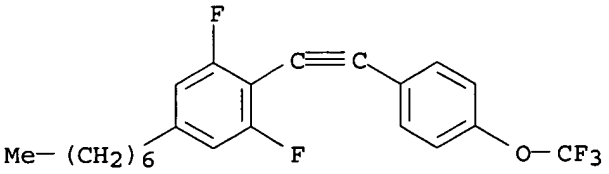
RN 144891-39-4 CAPLUS
CN Benzene, 1,3-difluoro-5-pentyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



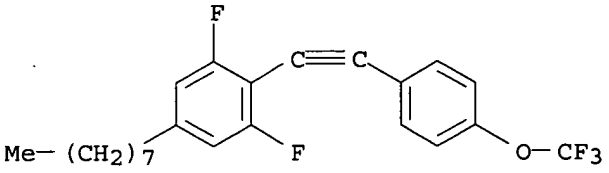
RN 144911-57-9 CAPLUS
CN Benzene, 1,3-difluoro-5-hexyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



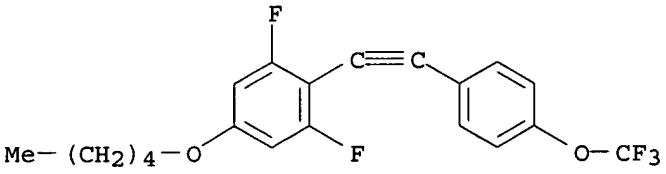
RN 144911-58-0 CAPLUS
CN Benzene, 1,3-difluoro-5-heptyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



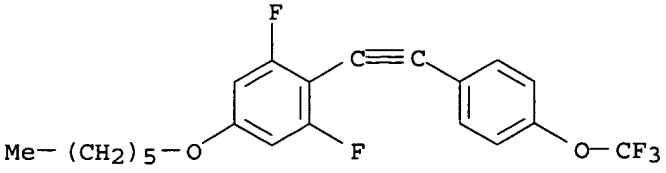
RN 144911-59-1 CAPLUS
CN Benzene, 1,3-difluoro-5-octyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



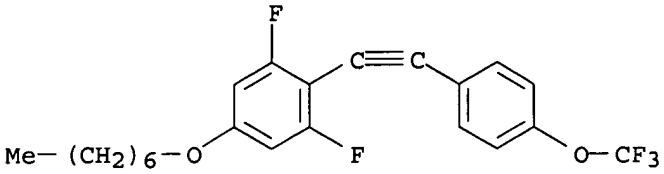
RN 144911-60-4 CAPLUS
CN Benzene, 1,3-difluoro-5-(pentyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl
]- (9CI) (CA INDEX NAME)



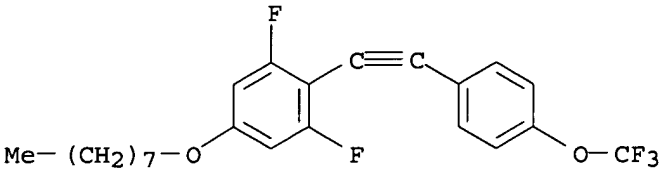
RN 144911-61-5 CAPLUS
CN Benzene, 1,3-difluoro-5-(hexyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



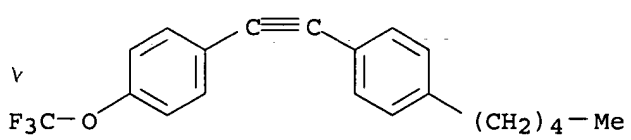
RN 144911-62-6 CAPLUS
CN Benzene, 1,3-difluoro-5-(heptyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl
]- (9CI) (CA INDEX NAME)



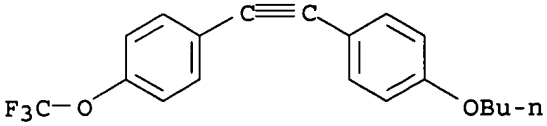
RN 144911-63-7 CAPLUS
CN Benzene, 1,3-difluoro-5-(octyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



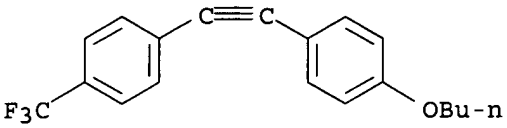
AN 1990:641336 CAPLUS
DN 113:241336
TI Synthesis and properties of liquid crystalline materials with high optical anisotropy
AU Reiffenrath, V.; Finkenzeller, U.; Poetsch, E.; Rieger, B.; Coates, D.
CS Ind. Chem. Div., E. Merck, Darmstadt, D-6100, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (1990), 1257(Liq. Cryst. Disp. Appl.), 84-94
CODEN: PSISDG; ISSN: 0277-786X
DT Journal
LA English
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 21, 75
AB The introduction of F and F-contg. substituents in the terminal position of high .DELTA.n (refractive index difference) materials leads to liq. crystals with high pos. dielec. anisotropy and low viscosity. These liq. crystals exhibit high resistivity and excellent UV-stability. In contrast to the cyano-substituent these moieties do not enhance the optical anisotropy; therefore the use of basic structures having high optical anisotropy such as tolanes and terphenyls is necessary. In the case of terphenyls the introduction of an ethylenic bridge in addn. to lateral fluorination leads to mols. having a wide nematic phase range.
ST synthesis liq crystal optical anisotropy; electrooptical device liq crystal dielec anisotropy
IT Liquid crystals
(prepn. of fluorine-contg., with high optical anisotropy and UV stability and low viscosity)
IT Optical imaging devices
(electro-, liq.-crystal, prepn. of fluorine-contg. liq. crystal materials having high optical anisotropy and UV stability and low viscosity for)
IT 95759-62-9P 116903-47-0P 121218-93-7P 130746-59-7P
130746-60-0P 130746-61-1P **130746-62-2P**
130746-63-3P 130746-64-4P 130746-65-5P 130746-66-6P
130746-67-7P 130746-68-8P 130746-69-9P 130746-70-2P 130746-71-3P
130746-72-4P 130746-73-5P 130746-74-6P 130746-75-7P 130746-76-8P
130746-77-9P 130746-78-0P 130746-79-1P 130746-80-4P 130746-81-5P
RL: PREP (Preparation)
(prepn. and dielec. anisotropy and UV stability and viscosity of, for display devices)
IT **130746-60-0P 130746-62-2P 130746-63-3P**
RL: PREP (Preparation)
(prepn. and dielec. anisotropy and UV stability and viscosity of, for display devices)
RN 130746-60-0 CAPLUS
CN Benzene, 1-[(4-pentylphenyl)ethynyl]-4-(trifluoromethoxy)- (9CI) (CA INDEX NAME)



RN 130746-62-2 CAPLUS
CN Benzene, 1-[(4-butoxyphenyl)ethynyl]-4-(trifluoromethoxy)- (9CI) (CA INDEX NAME)



RN 130746-63-3 CAPLUS
CN Benzene, 1-[(4-butoxyphenyl)ethynyl]-4-(trifluoromethyl)- (9CI) (CA INDEX NAME)



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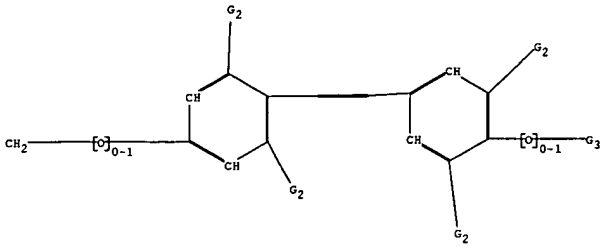
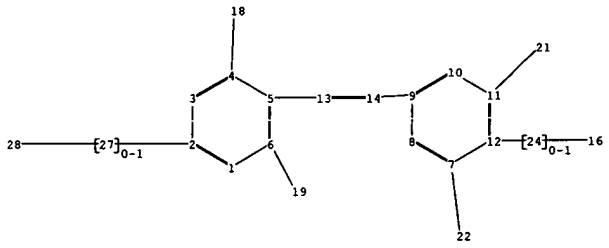




chain nodes :
13 14 16 18 19 21 22 24 27 28
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12
chain bonds :
2-27 4-18 5-13 6-19 7-22 9-14 11-21 12-24 13-14 16-24 27-28
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
exact/norm bonds :
2-27 4-18 6-19 7-22 11-21 12-24 16-24
exact bonds :
5-13 9-14 13-14 27-28
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

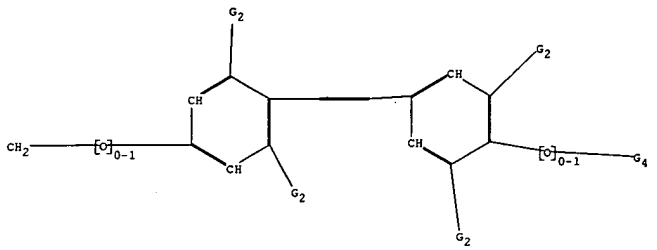
G1:C,O

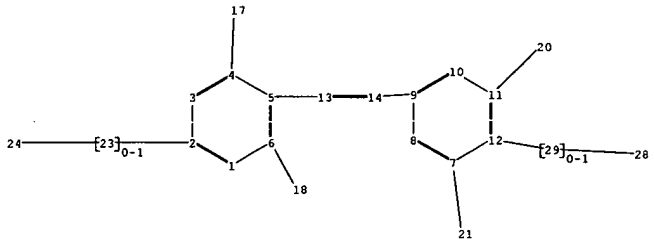
G2:H,F

G3:CF3,N

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:CLASS 14:CLASS 16:CLASS 18:CLASS 19:CLASS 21:CLASS 22:CLASS 24:CLASS
27:CLASS 28:CLASS

C:\STNEXP4\QUERIES\655466new.str





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13 14 17 18 20 21 23 24 28 29
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12
chain bonds :
2-23 4-17 5-13 6-18 7-21 9-14 11-20 12-29 13-14 23-24 28-29
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
exact/norm bonds :
2-23 4-17 6-18 7-21 11-20 12-29 28-29
exact bonds :
5-13 9-14 13-14 23-24
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

G1:C,O

G2:H,F

G3:CN,CF3,N

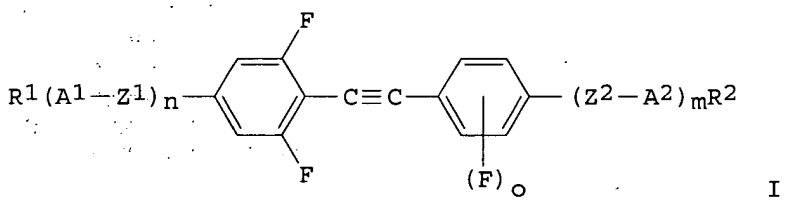
G4:CF3,N

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:CLASS 14:CLASS 17:CLASS 18:CLASS 20:CLASS 21:CLASS 23:CLASS 24:CLASS
28:CLASS 29:CLASS

AN 1993:59406 CAPLUS
DN 118:59406
TI 2,6 difluorotolane
IN Reiffenrath, Volker; Plach, Herbert
PA Merck Patent G.m.b.H., Germany
SO Ger. Offen., 19 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C07C043-225
ICS C07C025-24; C09K019-06; G09F009-35; G02F001-13; C07D319-06; C07D213-24; C07D239-24
ICA C09K019-18; C09K019-30; C09K019-34; C09K019-20; C09K019-58; C07D521-00; C07D401-10; C07D401-12; C07D405-10; C07D405-12
CC 25-3 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 4105742	A1	19920827	DE 1991-4105742	19910223
DE 4105742	C2	20010809		
PRAI DE 1991-4105742		19910223		

OS CASREACT 118:59406; MARPAT 118:59406
GI



I

AB A process was developed for the prepn. of 2,6-difluorotolane of formula I [R1, R2 = alkyl or alkenyl, A1, A2 = 1,4-cyclohexylene, -phenylene, 2- or 3-fluoro-1,4-phenylene, Z1, Z2 = CH2CH2, -CH2O-, (CH2)4, m, n, o = 1-2] as a component of liq. crystal medium having electrooptical properties. E.g., the treatment of 3,5-difluoropentylbenzene (0.129 mol) with 114 mL THF and BuLi followed by 4-ethoxyacetophenone (0.129 mol) gave a product mixt. which was treated with p-toluenesulfonic acid (4 g) in toluene. Subsequent reaction of product mixt. with .09 mL bromine in EtOAc and with 12.6 mL Et3N and then reaction with LDA in THF gave final product 4-pentyl-2,6-difluoro-4'-ethoxytolane.

ST fluorotolane electrooptical property; acetylene difluoro diphenyl; palladium catalyst coupling fluorophenylacetylene iodobenzene

IT Coupling reaction
(of difluorophenylacetylene with trifluoromethoxyiodobenzene and analogs, difluorotolanes from)

IT Coupling reaction catalysts
(palladium compds., for the coupling of difluorophenylacetylene with trifluoromethoxyiodobenzene and analogs, difluorotolanes from)

IT 144890-97-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(3)

IT 14221-01-3
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for the coupling of difluoroiodobenzene derivs. with fluorophenylacetylene)

IT 13965-03-2
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for the coupling of difluorophenylacetylene deriv. with trifluoromethoxyiodobenzene)

IT 628-17-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with difluorobromobenzene)
IT 461-96-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with iodopentane)
IT 103962-05-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with difluorophenylacetylene deriv.)
IT 766-98-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with ethoxydifluoroiodobenzene)
IT 144911-50-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with trifluoromethoxyiodobenzene)
IT 144891-25-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(iodination of)
IT 144891-24-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and coupling of, with fluorophenylacetylene)
IT 40817-08-1P 41122-70-7P 52709-83-8P 58743-75-2P 58743-76-3P
61203-99-4P 61204-01-1P 79832-84-1P 80944-44-1P 80955-71-1P
81936-32-5P 85600-56-2P 134143-76-3P 144890-96-0P 144890-98-2P
144890-99-3P 144891-00-9P 144891-01-0P 144891-02-1P 144891-03-2P
144891-04-3P 144891-05-4P 144891-06-5P 144891-07-6P 144891-08-7P
144891-09-8P 144891-10-1P 144891-11-2P 144891-12-3P 144891-13-4P
144891-14-5P 144891-15-6P 144891-16-7P 144891-17-8P 144891-18-9P
144891-19-0P 144891-20-3P 144891-21-4P 144891-22-5P 144891-23-6P
144891-26-9P 144891-27-0P 144891-28-1P 144891-29-2P 144891-30-5P
144891-31-6P 144891-32-7P **144891-33-8P 144891-34-9P**
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144891-38-3P 144891-39-4P 144891-40-7P 144891-41-8P
144891-42-9P 144891-43-0P 144891-44-1P 144891-45-2P 144891-46-3P
144891-47-4P 144891-48-5P 144891-49-6P 144891-50-9P 144891-51-0P
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144891-62-3P 144891-63-4P 144891-64-5P 144891-65-6P 144891-66-7P
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144911-33-1P 144911-34-2P 144911-35-3P 144911-36-4P 144911-37-5P
144911-38-6P 144911-39-7P 144911-40-0P 144911-41-1P 144911-42-2P
144911-43-3P 144911-44-4P 144911-45-5P 144911-46-6P 144911-47-7P
144911-48-8P 144911-49-9P 144911-51-3P 144911-52-4P 144911-53-5P
144911-54-6P 144911-55-7P 144911-56-8P **144911-57-9P**
144911-58-0P 144911-59-1P 144911-60-4P
144911-61-5P 144911-62-6P 144911-63-7P
144911-64-8P 144911-65-9P 144911-66-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT 144911-67-1P 144911-68-2P 144911-69-3P 144911-70-6P 144911-71-7P
144911-72-8P 144911-73-9P 144911-74-0P 144922-37-2P 144922-38-3P
144922-39-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT 1676-63-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with difluoro(pentyl)benzene)

IT 121219-25-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ethoxyacetophenone)

IT **144891-33-8P 144891-34-9P 144891-35-0P**
144891-36-1P 144891-37-2P 144891-38-3P
144891-39-4P 144911-57-9P 144911-58-0P
144911-59-1P 144911-60-4P 144911-61-5P
144911-62-6P 144911-63-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 144891-33-8 CAPLUS
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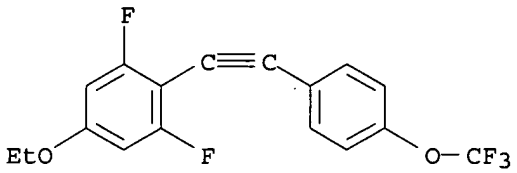
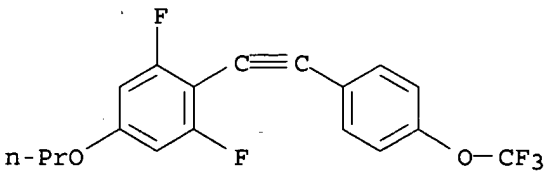
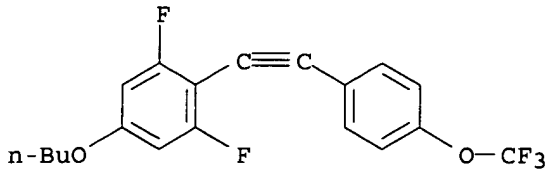


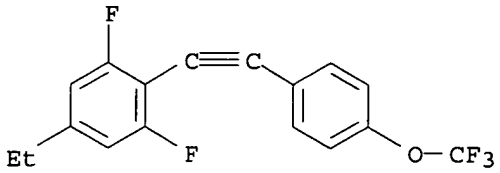
RN 144891-34-9 CAPLUS
CN Benzene, 1,3-difluoro-5-propoxy-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



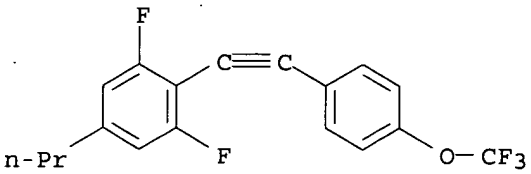
RN 144891-35-0 CAPLUS
CN Benzene, 5-butoxy-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144891-36-1 CAPLUS
CN Benzene, 5-ethyl-1,3-difluoro-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144891-37-2 CAPLUS
CN Benzene, 1,3-difluoro-5-propyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144891-38-3 CAPLUS
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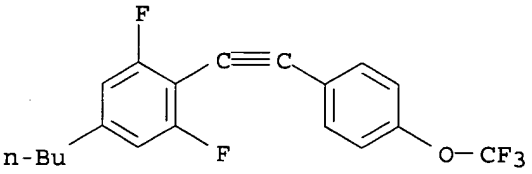
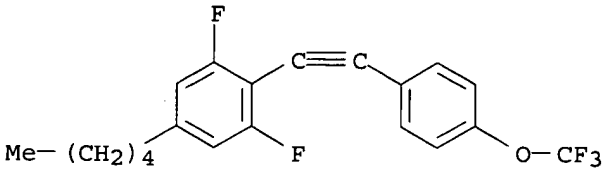
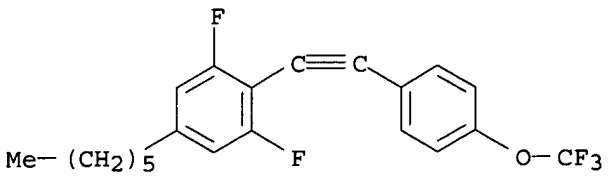
(9CI) (CA INDEX NAME)



RN 144891-39-4 CAPLUS
CN Benzene, 1,3-difluoro-5-pentyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144911-57-9 CAPLUS
CN Benzene, 1,3-difluoro-5-hexyl-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144911-58-0 CAPLUS
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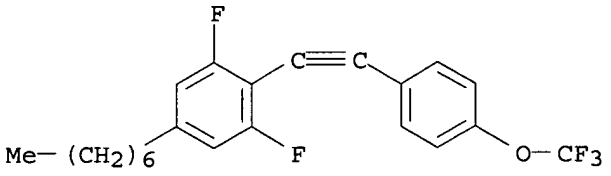
(9CI) (CA INDEX NAME)



RN 144911-59-1 CAPLUS
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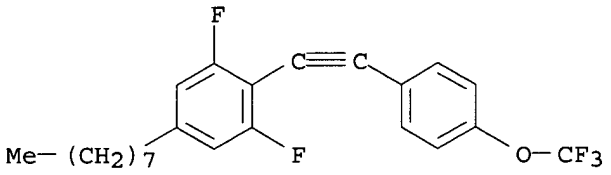
(9CI) (CA INDEX NAME)



RN 144911-60-4 CAPLUS
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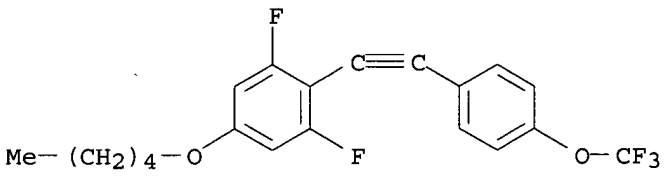
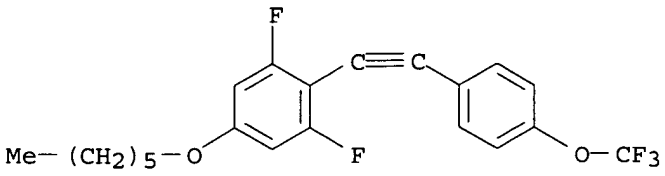
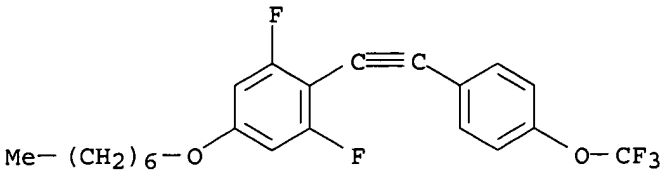
]- (9CI) (CA INDEX NAME)



RN 144911-61-5 CAPLUS
CN Benzene, 1,3-difluoro-5-(hexyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)



RN 144911-62-6 CAPLUS
CN Benzene, 1,3-difluoro-5-(heptyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl
]- (9CI) (CA INDEX NAME)



RN 144911-63-7 CAPLUS
CN Benzene, 1,3-difluoro-5-(octyloxy)-2-[[4-(trifluoromethoxy)phenyl]ethynyl]-
(9CI) (CA INDEX NAME)

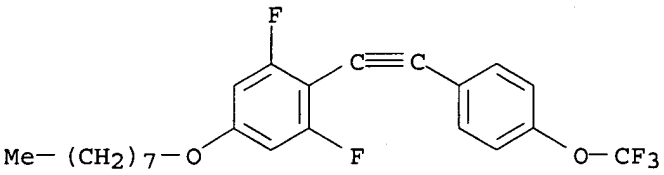
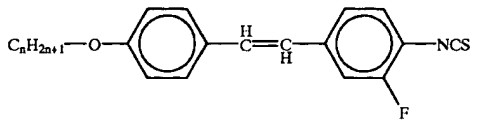
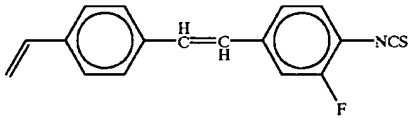


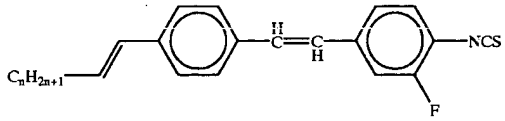
TABLE B-continued



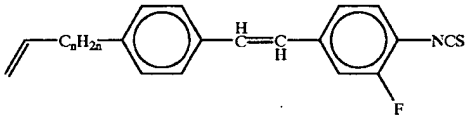
PVG-nO-S



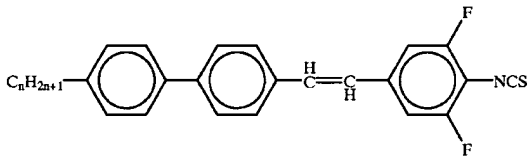
PVG-V-S



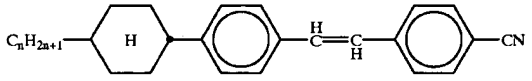
PVG-nV-S



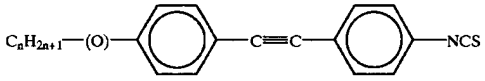
PVG-Vn-S



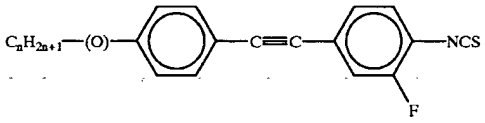
PPVU-n-S



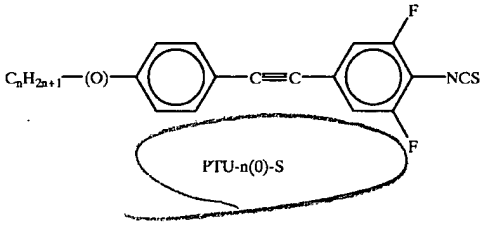
CPVP-n-N



PTP-n(0)-S



PTG-n(0)-S



PTU-n(0)-S

Use-example 7

[0216] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
PTG-5-S	10.0
PTU-3-S	15.0
PTU-4O-S	10.0
PVG-5-S	10.0
PGU-3-S	10.0
PPU-3-S	5.0
PPU-4-S	5.0
PPU-5-S	5.0
PGIP-3-N	15.0
PPYP-4N	15.0
Σ	100.0

[0217] This mixture has the following properties:

Clearing point (T(N,I))/° C.:	126.5
Smectic to nematic transition point (T(S,N))/° C.:	<-10
n_e (20° C., 589.3 nm):	1.9475
Δn (20° C., 589.3 nm):	0.4016

Use-example 8

[0218] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
PTG-5-S	10.0
PTU-3-S	13.0
PTU-4O-S	10.0
PVG-5-S	11.0
PGU-3-S	10.0
PPU-3-S	5.0
PPU-4-S	5.0
PPU-5-S	5.0
PGIP-3-N	12.0
PPYP-4N	13.0
PVG-V-S	6.0
Σ	100.0

[0219] This mixture has the following properties:

Clearing point (T(N,I))/° C.:	125.0
Smectic to nematic transition point (T(S,N))/° C.:	<-10
n_e (20° C., 589.3 nm):	1.9623
Δn (20° C., 589.3 nm):	0.4153

Use-example 9

[0220] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
PG-3-AN	8.0
PU-3-AN	7.0
PU-5-AN	7.0
PPVU-2-S	6.0
PPVU-3-S	6.0
PGP-3-N	6.0
PGIP-3-N	6.0
PPYP-4N	8.0
PTP-3-S	4.0
PTG-3-S	5.0
PVG-5-S	10.0
PTPG-2-N	4.0
PPU-CL-S	4.0
PTP-2O-S	4.0
PTP-4O-S	5.0
PTG-2O-S	5.0
PTG-4O-S	5.0
Σ	100.0

[0221] This mixture has the following properties:

Clearing point (T(N,I))/° C.:	135.0
n_e (20° C., 589.3 nm):	1.9906
Δn (20° C., 589.3 nm):	0.4511

Comparative Use-example 1

[0222] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
K6	12.0
K9	4.0
K15	29.6
M9	8.8
T15	8.0
PGIP-3-N	20.0
BB2I	5.6
BCH-5	12.0
	100.0

[0223] This mixture has the following properties:

Clearing point (T(N,I))/° C:	113.0
n_e (20° C. 589.3 nm):	1.8160
Δn (20° C. 589.3 nm):	0.2860
$\epsilon\|\|$ (20° C., 1 kHz):	22.8
$\Delta\epsilon$ (20° C., 1 kHz):	17.3

Comparative Use-example 2

[0224] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
ME2N.F	10.00
PPTUI-2-4	8.45
PPTUI-3-2	5.16
PPTUI-3-4	15.82
PPTUI-4-4	35.54
PPTUI-5-2	7.25
PPTUI-5-4	17.78
E	100.00

[0225] This mixture has the following properties:

Clearing point (T(N,I))/° C.:	145° C.
Δn (20° C., 589.3 nm):	0.336
ϵ‖ (20° C., 1 kHz):	9.8
Δϵ (20° C., 1 kHz):	6.5

Comparative Use-example 3

[0226] A liquid crystal mixture is realized consisting of:

Compound/Abbreviation	Concentration/mass-%
GGP-5-GL	16.0
PGIGI-3-CL	6.0
BCH-2F.F	14.0
BCH-3F.F	15.0
BCH-5F.F	14.0
BCH-3F.F.F	14.0
CGU-2-F	6.0
CGU-3-F	6.0
CGU-5-F	6.0
CBC-33F	3.0
E	100.0

[0227] This mixture has the following properties:

Clearing point (T(N,I))/° C.:	81.0
Smectic to nematic transition point (T(S, N))/° C:	<-30
n_e (20° C., 589.3 nm):	1.6711
Δn (20° C. 589.3 nm):	0.1603
ϵ‖ (20° C., 1 kHz):	14.6
Δϵ (20° C. 1 kHz):	9.9

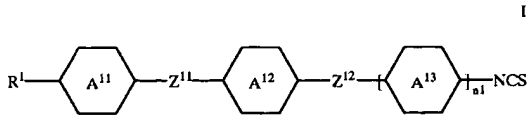
What is claimed is:

1. A liquid crystal medium, comprising:

a strongly dielectrically positive liquid crystal component A, containing one or more liquid crystal compounds with a terminal isothiocyanate group and having a Δn of more than 0.30 at 20° C. and 589.3 nm, and

a dielectrically positive component B containing of one or more terminally polar substituted bi- or terphenyl compounds.

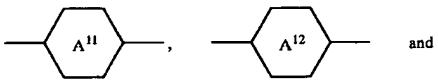
2. A liquid crystal medium according to claim 1, wherein the dielectrically positive liquid crystal component A comprises one or more compounds of formula I



I

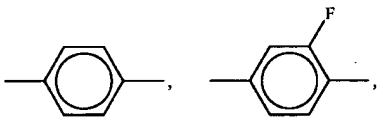
wherein

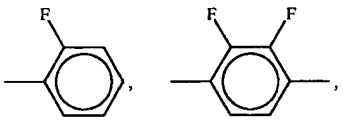
R^1 is n-alkyl, or n-alkoxy with 1 to 10 C-atoms, alkenyl, alkenyloxy or alkoxyalkyl with 2 to 7 C-atoms or CN, NCS, halogen, or alkyl, alkenyl, alkoxy, alkenyloxy or alkoxyalkyl substituted by one or more halogens,

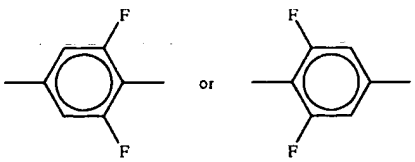


and

Each, independently of each other, are







Z^{11} and Z^{12} each are independent of each other a single bond or trans —CH=CH—, provided that when n^1 is 0, Z^{12} is a single bond

n^1 is 0 or 1.